

Dr. Peter Beetham

Vitae:

Monash University, Victoria, Australia: 1981-1984, BSc.(HONS)

1984: Botany 400 Honours Year. The project was titled; "A serological and cytological study of viruses of cultivated orchids". (First Class Honours).

Queensland University of Technology, Queensland, Australia: 1992-1997, PhD: Thesis title - "Transcription of mRNAs from the banana bunchy top virus genome."

1985 - 1992 Peter was employed by the Victorian Department of Agriculture and Rural Affairs (DARA), Australia, as a Scientific Officer Class SCI-2, based at the Plant Research Institute (PRI), Burnley. The primary aim of this project was to set up a program to produce pathogen-tested sweet potatoes for the major sweet potato growing countries of the South Pacific and to investigate the relative performance of this pathogen-tested material against the original field material in the collaborating countries.

1992 - 1998 Peter completed his PhD at the Queensland University of Technology, (QUT), in Brisbane, Australia. The plant virology group at QUT specializes in the diagnosis and control of viruses of tropical and sub-tropical crops including bananas, papaya, cucurbits, sugarcane, avocado and taro. The group consisted of approximately 25 scientists divided into two areas: (i) virus characterization including the molecular biology of plant viruses, development of virus diagnostics and the development of virus resistance transgenes and (ii) plant tissue culture and transformation for virus resistance. He was part of the group specifically working on the molecular biology of banana bunchy top virus (BBTV) and the development of transgenes for pathogen-derived resistance.

Peter continued his research as a postdoctoral scientist at Boyce Thompson Institute at Cornell University, Ithaca, NY in the laboratory of Dr. Gregory May. In the May Lab, research was directed at determining the underlying mechanisms of the chimeraplasty in plant cells (a new technology developed at Kimeragen, Inc. Newtown, PA using chimeric oligonucleotides for gene targeting). These activities include determining the applicability of this technology toward multiple gene targets, comparison of efficiencies between species, and the isolation and characterization of the associated proteins. In addition, the application of this technology as a system for site-directed mutagenesis in plant genomes was studied.

Peter joined Kimeragen, Inc. in early 1999 as a Senior Scientist in the Plant Industrial Products Division where he and his colleague Patricia Avissar have set up a laboratory to study chimeraplasty in plants. This laboratory will be involved in many aspects of molecular and cell biology. During 2000 he has taken a lead role in setting up a new facility in San Diego, CA. Currently, the San Diego facility has recruited a technical team of 10 scientists to work on many aspects of genoplasty in plants.

Selected refereed papers (1997 - 2000) and Patents

Beetham, PR, GJ Hafner, RM Harding and JL Dale (1997) Two mRNAs are transcribed

from banana bunchy top virus DNA-1. *Journal of General Virology* **78**: 229-236.

Dugdale, B., **PR Beetham**, DK Becker, RM Harding and JL Dale (1998) Promoter activity associated with the intergenic regions of banana bunchy top virus DNA-1 to -6 in transgenic tobacco and banana cells. *Journal of General Virology* **78**: 2301-2311.

Beetham, PR, RM Harding and JL Dale (1998) Analysis of the banana bunchy top viral mRNAs of DNA-2 to 6 and the identification of an ORF for BBTV DNA-2. *Archives of Virology* **144**: 89-105.

Beetham, PR, PB Kipp, XL Sawycky, CJ Arntzen and GD May (1999) A tool for functional plant genomics: Chimeric RNA/DNA oligonucleotides cause *in vivo* gene-specific mutations. *Proceedings of National Academy of Science, USA* **96**: 8774-8778

Dugdale, B., DK Becker, **PR Beetham**, RM Harding and JL Dale (2000) Promoters derived from banana bunchy top virus DNA-1 to -5 direct vascular associated expression in transgenic banana (*Musa spp.*). *Plant Cell Reports* **19**: 810-814.

Balint-Kurti, P.J., Clendennen, S.K., Dolezelova, M., Valarik, M., Dolezel, J., **Beetham, P.R.**, May, G.D. (2000) Identification and chromosomal localization of the *monkey* retrotransposon in *Musa* sp. *Mol. Gen. Genet.* **263**: 903-915.

Beetham, PR, and GD May (2001) Characterization of an Arabidopsis human Rec2 homologue. *Plant Cell*. (in preparation).

"Intergenic regions of banana bunchy top virus" Dale, J.L., RM Harding, B Dugdale, **PR Beetham**, GJ Hafner and D Becker Australian Patent # PN3285 (5/31/95) and International Patent # PCT AU96/00335 (5/31/96).